

REMARKS

Claims 1-3, 9-11, 17, 19 and 20 have been amended.

The Examiner has rejected applicants' claims 1-3, 7, 9-11, 15, 17, 19 and 20 under 35 U.S.C. §102(e) as being anticipated by the Lin, et al. (U.S. 6,757,428) patent. Applicants have amended applicants' independent claims 1, 9, 17, 19 and 20, and with respect to such claims, as amended, and their respective dependent claims, the Examiner's rejection is respectfully traversed.

Applicants' independent claims 1, 9, 17, 19 and 20 have been amended to better define applicants' invention. More particularly, applicants' independent claim 1 has now been amended to recite an image retrieval apparatus for retrieving a desired image from a plurality of stored images, comprising storage means for storing the plurality of images and an image feature set of each of the plurality of images in a form correlated with the image, wherein the image feature set of each image includes image features of a predetermined number of tile images obtained by dividing an image into the predetermined number of tiles, feature calculation means for dividing a retrieval source image into the predetermined number of tile images and obtaining an image feature set of the retrieval source image by calculating an image feature of each of the tile images, acquisition means for generating a plurality of image feature sets by multiplying an image feature included in an image feature set stored in said storage means by a constant, and acquiring a plurality of image feature sets regarding one image by varying the constant, similarity calculating means for calculating degree of similarity between each of the plurality of images and the retrieval source image based on the plurality of image feature sets acquired by the acquisition means and the image feature set calculated by the feature calculation means, wherein the similarity calculating means

calculates degree of similarity between each image feature set of the plurality of image feature sets acquired by the acquisition means and the image feature set calculated by the feature calculation means, and adopts a maximum degree of similarity as the degree of similarity between a particular image and the retrieval source image, and retrieval means for retrieving the desired image from the plurality of stored images based on the degrees of similarity between the plurality of stored images and the retrieval source image calculated by the similarity calculating means. Applicants' independent claims 9 and 17 have been similarly amended. Applicants' independent claims 19 and 20 have also been amended to recite an image feature set and a plurality of image feature sets.

The constructions recited in applicants' independent claims 1, 9, 17, 19 and 20, and their respective dependent claims, are not taught or suggested by the cited art of record. More particularly, the Examiner has argued that Lin, et al. discloses feature calculation means for dividing a retrieval source image, i.e. load target image, into the predetermined number of tile images and obtaining a set of image features by calculating an image feature of each of the tile images (col. 9, lines 1-13 and col. 9, line 58-col. 10, line 6), and an acquisition means for generating image features by multiplying each of the image features constituting the set of image features that have been stored in the storage means by a constant and acquiring plural sets of image features regarding one image by varying the constant (col. 10, lines 15-39 and col. 16, lines 38-50).

Applicants have reviewed the portions of the Lin, et al. patent cited by the Examiner and believe that there is no teaching or suggestion in the Lin, et al. patent of generating a plurality of image feature sets by multiplying an image feature included in an image feature set stored in the storage means by a constant and acquiring a plurality of image features sets

regarding one image by varying the constant, as recited in applicants' amended independent claims 1, 9 and 17. Applicants also believe that the Lin, et al. patent fails to teach or suggest generating a plurality of image feature sets by multiplying the image feature set of the retrieval source image or the image feature set of the selected image by a variable, as recited in applicants' independent claims 19 and 20.

In particular, the Lin, et al. patent teaches in column 9, lines 1-13 and column 9, line 58 to column 10, line 39 that the color space is used as the basis of color characterization wherein the color space is divided into a plurality of bins, the number of which is determined based on a resolution complexity level, with a low complexity level comprising 16 possible bins, a medium complexity level comprising 30 possible bins and high complexity level comprising 58 possible color bins. These passages also teach that each pixel of an image is assigned to one of the bins when color characterization of the image is performed. Thus, in the Lin, et al. patent, a set of image features, i.e. color bins, for an image is obtained by dividing the image into a plurality of pixels that form the image and assigning each pixel of the image to one of the image features, i.e. a possible color bin. There is no mention in these cited passages of Lin, et al. of multiplying any of the image features included in an image feature set by a constant. Instead, these passages of Lin, et al. merely teach that the number of available image features, or color bins, for use in forming an image feature set may be varied in accordance with the resolution complexity, and there is no generating in Lin, et al. of multiple image feature sets by multiplying each of the image features in the set by a constant.

Likewise, column 16, lines 38-50 of Lin, et al., cited by the Examiner, fail to teach or suggest generating a plurality of image feature sets by multiplying each image feature included in an image feature set by a constant. Specifically, column 12, line 66 to column 13,

line 14 of the Lin, et al. patent teach that after performing color characterization of the image by assigning each pixel to a color bin, percentages of pixels in each bin relative to the total number of pixels are determined and are used in similarity determinations. Column 16, lines 38-50 of Lin, et al., in turn, teach that in determining similarity between two images, the percentages of one image are compared with the percentages of another image to obtain a value representing a degree of similarity, which is then multiplied by a variable factor to produce a Match Score.

Thus, column 16, lines 38-50 of the Lin, et al. patent teach multiplication of a value representing a degree of similarity between two image feature sets by a variable. This is completely different from multiplying an image feature included in an image feature set by a constant so as to generate a plurality of image feature sets.

Moreover, because the cited Lin, et al. patent fails to teach or suggest generating a plurality of image feature sets by multiplying an image feature included in an image feature set by a constant, the Lin, et al. patent also does not, and cannot, teach or suggest acquiring the plurality of image feature sets regarding one image by varying the constant. As discussed above, the Lin, et al. patent merely teaches varying the number of available image features, i.e. color bins, and in Lin, et al., only one image feature set is formed for each image from the available image features. See, Col. 9, lines 6-13, Col. 9, line 58 to Col. 10, line 39, Col. 12, line 66 to Col. 13, line 14. The Lin, et al. patent also teaches that the image feature set of an image may undergo error compensation processing in which a level of sharing between neighboring color bins is determined and the percentages assigned to neighboring bins are shifted based on the level of sharing. Col. 16, lines 5-37. Finally, as previously mentioned,

the Lin, et al. patent at column 16, lines 38-50 teaches multiplication of a value representing a degree of similarity between two image feature sets by a variable.

However, there is no mention in these passages of the Lin, et al. patent of using a constant to generate a plurality of image feature sets and varying such constant so as to acquire the plurality of image feature sets for one image. Nor is there a mention of generating a plurality of image feature sets by multiplying the image feature set of a retrieval source image or the image feature set of a selected image by a variable.

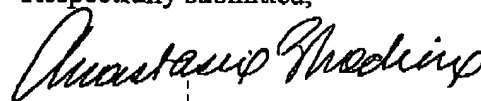
Accordingly, applicants' amended independent claims 1, 9 and 17, and their respective dependent claims, all of which recite generating a plurality of image feature sets by multiplying an image feature included in an image feature set stored in the storage means by a constant, and acquiring the plurality of image feature sets regarding one image by varying the constant, patentably distinguish over the Lin, et al. patent. Likewise, applicants' amended independent claims 19 and 20, and their respective dependent claims, all of which recite generating a plurality of image feature sets by multiplying the image feature set of the retrieval source image or the image feature set of the selected image by a variable, also patentably distinguish over the Lin, et al. patent.

In view of the above, it is submitted that applicants' claims, as amended, patentably distinguish over the cited art of record. Accordingly, reconsideration of the claims is respectfully requested.

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